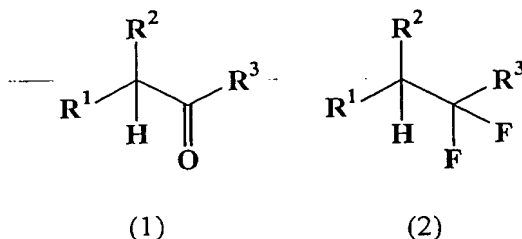


WHAT IS CLAIMED IS:

1. A process for producing a fluorine-containing compound of the following formula (2), which comprises reacting a compound of the following formula (1) with a compound of the formula X-Z or a compound of the formula Z₂O (wherein Z is a monovalent group which gives a leaving group of the structure -OZ, and X is a chlorine atom, a bromine atom or an iodine atom), and then acting a fluorinating agent which generates fluorine anions thereon to obtain the fluorine-containing compound of the following formula (2):

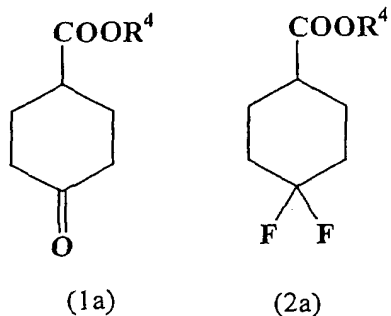


wherein each of R¹, R² and R³ which are independent of one another, is a hydrogen atom, a fluorine atom or a monovalent organic group, or two selected from R¹, R² and R³ together form a bivalent organic group, and the other one is a hydrogen atom, a fluorine atom or a monovalent organic group.

2. The production process according to Claim 1, wherein the fluorinating agent which generates fluorine anions is HF.
3. The production process according to Claim 1, wherein the fluorinating agent which generates fluorine anions is

acted in the presence of a catalyst.

4. The production process according to Claim 1, wherein the compound of the formula (1) is a compound of the following formula (1a), and the fluorine containing
 5 compound of the formula (2) is a fluorine-containing compound of the following formula (2a):

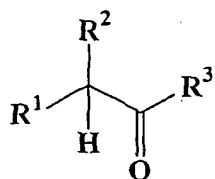


- wherein R^4 is a C_{1-20} alkyl group, a C_{3-8} cycloalkyl group, an alkyl group substituted with at least one aryl group,
 10 an alkyl group substituted with at least one monovalent heterocyclic group, an aryl group, a substituted aryl group or a C_{1-20} fluoroalkyl group.

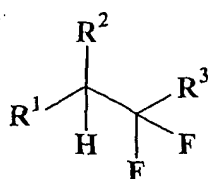
5. The production process according to Claim 1, wherein the compound formed by the reaction of the compound of the formula (1) with the compound of the formula X-Z or
 15 the compound of the formula Z_2O comprises at least two types of compounds, and the fluorinating agent which generates fluorine atoms is acted on said at least two types of compounds without isolating them.

- 20 6. A process for producing a fluorine-containing compound of the following formula (2), which comprises reacting a compound of the following formula (1) with a

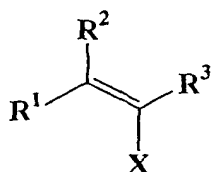
compound X-Z (wherein Z is a monovalent group which gives a leaving group of the structure -OZ, and X is a chlorine atom, a bromine atom or an iodine atom) to obtain at least one type of a compound selected from compounds of the following formulae (3) to (7), and then acting a fluorinating agent which generates fluorine anions on said at least one type of a compound to obtain the fluorine-containing compound of the following formula (2):



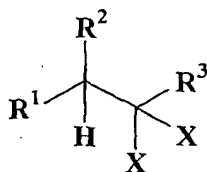
(1)



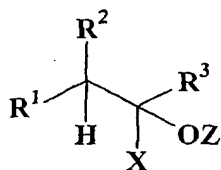
(2)



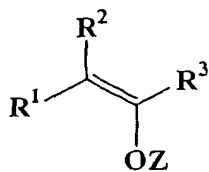
(3)



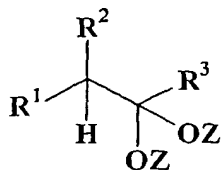
(4)



(5)



(6)



(7)

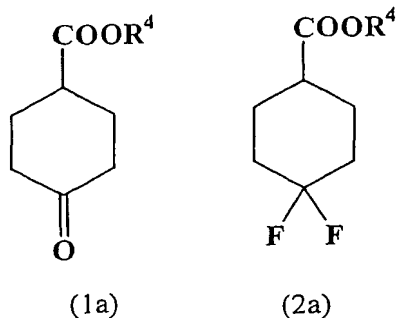
wherein each of R^1 , R^2 and R^3 which are independent of one another, is a hydrogen atom, a fluorine atom or a monovalent organic group, or two selected from R^1 , R^2 and R^3 together form a bivalent organic group, and the other one is a hydrogen atom, a fluorine atom or a monovalent organic group.

7. The production process according to Claim 6, wherein the fluorinating agent which generates fluorine anions is

HF.

8. The production process according to Claim 6, wherein the fluorinating agent which generates fluorine anions is acted in the presence of a catalyst.

- 5 9. The production process according to Claim 6, wherein the compound of the formula (1) is a compound of the following formula (1a), and the fluorine containing compound of the formula (2) is a fluorine-containing compound of the following formula (2a):



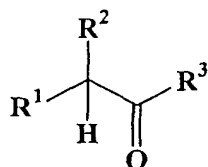
10

wherein R^4 is a C_{1-20} alkyl group, a C_{3-8} cycloalkyl group, an alkyl group substituted with at least one aryl group, an alkyl group substituted with at least one monovalent heterocyclic group, an aryl group, a substituted aryl group or a C_{1-20} fluoroalkyl group.

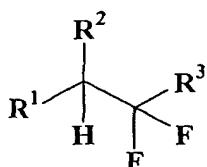
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10. The production process according to Claim 6, wherein the compound formed by the reaction of the compound of the formula (1) with the compound of the formula X-Z or the compound of the formula Z_2O comprises at least two types of compounds, and the fluorinating agent which generates fluorine atoms is acted on said at least two types of compounds without isolating them.
- 20

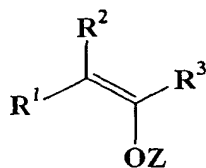
11. A process for producing a fluorine-containing compound of the following formula (2), which comprises reacting a compound of the following formula (1) with a compound of the formula Z_2O (wherein Z is a monovalent group which gives a leaving group of the structure $-OZ$) to obtain at least one type of a compound selected from a compound of the following formula (6) and a compound of the following formula (7), and then acting a fluorinating agent which generates fluorine anions on said at least one type of the compound to obtain the fluorine-containing compound of the following formula (2):



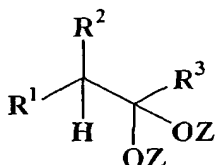
(1)



(2)



(6)



(7)

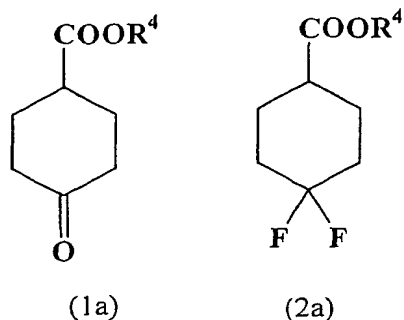
wherein each of R^1 , R^2 and R^3 which are independent of one another, is a hydrogen atom, a fluorine atom or a monovalent organic group, or two selected from R^1 , R^2 and R^3 together form a bivalent organic group, and the other one is a hydrogen atom, a fluorine atom or a monovalent organic group.

12. The production process according to Claim 11, wherein

the fluorinating agent which generates fluorine anions is HF.

13. The production process according to Claim 11, wherein the fluorinating agent which generates fluorine anions is acted in the presence of a catalyst.

14. The production process according to Claim 11, wherein the compound of the formula (1) is a compound of the following formula (1a), and the fluorine containing compound of the formula (2) is a fluorine-containing compound of the following formula (2a):



wherein R^4 is a C_{1-20} alkyl group, a C_{3-8} cycloalkyl group, an alkyl group substituted with at least one aryl group, an alkyl group substituted with at least one monovalent heterocyclic group, an aryl group, a substituted aryl group or a C_{1-20} fluoroalkyl group.

15. The production process according to Claim 11, wherein the compound formed by the reaction of the compound of the formula (1) with the compound of the formula X-Z or the compound of the formula Z_2O comprises at least two types of compounds, and the fluorinating agent which generates fluorine atoms is acted on said at least two

types of compounds without isolating them.